

Exhibit 9

**NCBI**

PubMed Nucleotide Protein Genome Structure PopSet Taxonomy OMIM Books

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1: NM\_005226. Homo sapiens endo...

Related Sequences, OMIM, Protein, PubMed, Taxonomy.

LinkOut

[gi:4885194]

LOCUS NM\_005226 1137 bp mRNA linear PRI 16-NOV-2000  
 DEFINITION Homo sapiens endothelial differentiation, sphingolipid G-protein-coupled receptor, 3 (EDG3), mRNA.  
 ACCESSION NM\_005226  
 VERSION NM\_005226.1 GI:4885194  
 KEYWORDS  
 SOURCE human.  
 ORGANISM Homo sapiens Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
 REFERENCE 1 (bases 1 to 1137)  
 AUTHORS Yamaguchi,F., Tokuda,M., Hatase,O. and Brenner,S.  
 TITLE Molecular cloning of the novel human G protein-coupled receptor (GPCR) gene mapped on chromosome 9  
 JOURNAL Biochem. Biophys. Res. Commun. 227 (2), 608-614 (1996)  
 MEDLINE 91032811  
 PUBMED 8878560  
 REFERENCE 2 (bases 1 to 1137)  
 AUTHORS Au,S., Bleu,T., Huang,W., Hallmark,O.G., Coughlin,S.R. and Goetzl,E.J.  
 TITLE Identification of cDNAs encoding two G protein-coupled receptors for lysosphingolipids  
 JOURNAL FEBS Lett. 417 (3), 279-282 (1997)  
 MEDLINE 91072391  
 PUBMED 9109733  
 REFERENCE 3 (bases 1 to 1137)  
 AUTHORS Ancellin,N. and Hla,T.  
 TITLE Differential pharmacological properties and signal transduction of the sphingosine 1-phosphate receptors EDG-1, EDG-3, and EDG-5  
 JOURNAL J Biol. Chem. 274 (27), 18997-19002 (1999)  
 MEDLINE 91315836  
 PUBMED 11383399  
 REFERENCE 4 (bases 1 to 1137)  
 AUTHORS Siegel,S.  
 TITLE Sphingosine 1-phosphate: a ligand for the EDG-1 family of G-protein-coupled receptors  
 JOURNAL Ann. N. Y. Acad. Sci. 905, 54-60 (2000)  
 MEDLINE 21278382  
 PUBMED 110818441  
 REFERENCE 5 (bases 1 to 1137)  
 AUTHORS Hla,T., Lee,M.J., Ancellin,N., Thangada,S., Liu,C.H., Kluk,M., Chae,S.S. and Wu,M.T.  
 TITLE Sphingosine-1-phosphate signaling via the EDG-1 family of G-protein-coupled receptors  
 JOURNAL Ann. N. Y. Acad. Sci. 905, 16-24 (2000)

[http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=nucleotide&list\\_uids=4...](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=nucleotide&list_uids=4...) 4/28/2002

## NCBI Sequence Viewer

MEDLINE 20278379  
 PUBMED 10318438  
 REFERENCE 6 (bases 1 to 1137)  
 AUTHORS Himmel, H.M., Meyer Zu Heringdorf, D., Graf, E., Dobrev, D., Krtner, A., Schuler, S., Jakobs, K.H. and Ravens, U.  
 TITLE Evidence for Edg-3 receptor-mediated activation of I(K.ACh) by sphingosine-1-phosphate in human atrial cardiomyocytes  
 JOURNAL Mol. Pharmacol. 58 (2), 449-454 (2000)  
 MEDLINE 20368609  
 PUBMED 10908314  
 COMMENT REVIEWED REFSEQ: This record has been curated by NCBI staff. The reference sequence was derived from X83864.1.  
 Summary: This gene encodes a member of the family I of the G protein-coupled receptors, as well as the EDG family of proteins. This protein has been identified as a functional receptor for sphingosine 1-phosphate and likely contributes to the regulation of angiogenesis and vascular endothelial cell function.

FEATURES	Location/Qualifiers
source	1..1137 /organism="Homo sapiens" /db_xref="taxon:9606" /chromosome="9" /map="9q22.1-q22.2"
gene	1..1137 /gene="EDG3" /note="EDG-3" /db_xref="LocusID:1903" /db_xref="MIM:601965"
CDS	1..1137 /gene="EDG3" /note="G protein-coupled receptor, endothelial differentiation gene-3; lysosphingolipid receptor 3; sphingosine 1-phosphate receptor EDG3; S1P receptor EDG3" /codon_start=1 /db_xref="LocusID:1903" /db_xref="MIM:601965" /product="endothelial differentiation, sphingolipid G-protein-coupled receptor, 3" /protein_id="NP_005217.1" /db_xref="GI:4885195" /translation="MATALPPRLQPVRGNETLREHYQYVGKLAGRLKEASEGSTLTV LFLVICSFIVLENLMVLIAIWKNNKFHNRMYFFIGNLALCDLLAGIAYKVNLMSGKK TFSLSPTVWFREGSMFVALGASTCSLLAIAIERHLTMIKMRPYDANKRHRVFLIGM CWLIATFTLGALPILGWNCLHNLPDCSTILPLYSKKYIAFCISIFTAILVTIVLYARI YFLVKSSSRKVANHNNERSMALLRTVVIVVSFIAWSPLFILFLIDVACRVQACPI LFKAQWFIVLAVLNSAMNPVIYTLASKEMRRAFFRLVCNCLVRGRGARASPIQPALDP SRSKSSSSNNSSHSPKVKEDELPHTDPSSCIMDKNAALQNGIFCN"
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misc_feature	697..894 /note="7tm_1; Region: 7 transmembrane receptor (rhodopsin family)"
BASE COUNT	226 a    362 c    298 g    251 t
ORIGIN	

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 sense 121 ctc ccacccg tgcttttctt ggtcatctgc agttcatcg tcttggagaa cctgatggtt  
 181 ttg tggcca tctggaaaaa caataaattt cacaaccgca tgtactttt cattggcaac  
 241 ctg gtctct ggcacctgtc ggccggcatac gcttacaagg tcaacattct gatgtctggc

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301 aaga~~aa~~gacgt tcagcctgtc tcccacggtc tggttccctca gggagggcag tatgttgcgtg  
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Revised: October 24, 2001.

EDG-3

RP

antisense

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